

# PATENT COOPERATION TREATY

# CONFIRMATION

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:  
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21 FEB 2006

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

(PCT Rule 66)

Date of mailing  
(day/month/year)

13 FEB 2006

Applicant's or agent's file reference  
FP2060/MM/FY

**REPLY DUE** within **TWO MONTHS**  
from the above date of mailing

International application No.  
**PCT/SG2004/000021**

International filing date (day/month/year)  
20 January 2004

Priority date (day/month/year)  
20 January 2004

International Patent Classification (IPC) or both national classification and IPC

INT. CL.

**H04J 13/00** (2006.01)

**H04J 13/02** (2006.01)

**H04J 13/04** (2006.01)

**DUE DATE**

13/4/06

Applicant

AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH et al

**ENTERED**

1. ☒ The written opinion established by the International Searching Authority:

☒ is ☐ is not

considered to be a written opinion of the International Preliminary Examining Authority.

2. This **second** (second, etc.) opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

**When?** See the **Reply Due** date indicated above. However, the Australian Patent Office will not establish the Report before the earlier of (i) a response being filed, or (ii) one month before the **Final Date** by which the international preliminary examination report must be established. The Report will take into account any response (including amendments) filed before the Report is established. **If no response is filed by 1 month before the Final Date**, the international preliminary examination report will be established on the basis of this opinion.

Applicants wishing to have the benefit of a further opinion (if needed) before the report is established should ensure that a response is filed at least **3 months before the Final Date** by which the international preliminary examination report must be established.

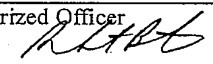
**How?** By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

**Also** For an additional opportunity to submit amendments, see Rule 66.4.  
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis.  
For an informal communication with the examiner, see Rule 66.6.

4. The **FINAL DATE** by which the international preliminary report on patentability (Chapter II of the PCT) must be established according to Rule 69.2 is: 20 May 2006

Name and mailing address of the IPEA/AU  
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WRITTEN OPINION OF THE  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

International application No.

PCT/SG2004/000021

**Box No. I**      **Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of:
- ☒ The international application in the language in which it was filed:
- ☐ A translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3(a) and 23.1 (b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))
2. With regard to the elements of the international application, this opinion has been established on the basis of *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed.")*:
- ☒ the international application as originally filed/furnished
- ☐ the description:    pages \_\_\_\_\_, as originally filed/furnished  
                              pages \_\_\_\_\_, received by this Authority on \_\_\_\_\_ with the letter of  
                              pages \_\_\_\_\_, received by this Authority on \_\_\_\_\_ with the letter of
- ☐ the claims:        pages \_\_\_\_\_, as originally filed/furnished  
                              pages \_\_\_\_\_, as amended (together with any statement) under Article 19,  
                              pages \_\_\_\_\_, received by this Authority on \_\_\_\_\_ with the letter of  
                              pages \_\_\_\_\_, received by this Authority on \_\_\_\_\_ with the letter of
- ☐ the drawings:    pages \_\_\_\_\_, as originally filed/furnished  
                              pages \_\_\_\_\_, received by this Authority on \_\_\_\_\_ with the letter of  
                              pages \_\_\_\_\_, received by this Authority on \_\_\_\_\_ with the letter of
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_
4. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

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International application No.

PCT/SG2004/000021

**Box No. V** Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 2 – 26, 28 – 30, 32 – 35, 37 – 54	YES
	Claims 1, 27, 31, 36	NO
Inventive step (IS)	Claims	YES
	Claims 1 – 54	NO
Industrial applicability (IA)	Claims 1 – 54	YES
	Claims	NO

2. Citations and explanations:

New Citations

- US 2003 0165131 A1 (LIANG et al.) 4 September 2003 (New Citation)
- Shengli Zhou et. al, "Chip Interleaved block spread CDMA versus DS-CDMA for cellular downlink: a comparative study", Vol. 3 Issue 1, IEEE Transactions on Wireless Communications, posted online 14 January 2004, pp 176 – 190 (New Citation)

Citations in International Search Report

- US 2002 0126741 A1 (BAUM et al.) 12 September 2002
- K. YANG et al, "Multistage Interference Cancellation with Frequency Domain Equalization for Uplink Transmission of Single Carrier Cyclic Prefix Assisted CDMA System", Proceedings of the IEEE Wireless Communications and Networking Conference, March 2002, pp 585 – 590
- R. MORRISON et. al., "On the use of Cyclic Extension in OFDM" Proceedings of the 54<sup>th</sup> IEEE Vehicular Technology Conference, VTC 2001 Fall, Vol. 2, pp 843 – 847, 2001

Novelty (N) claims 1, 27, 31, 36

Citation 1 explicitly discloses

- Receiver (for example see abstract, figure 7, paragraphs [0116] – [0118], [0123])
- Filter ( for example see figure 7, paragraph [0118])
- sequence extension remover (for example see figure 7, paragraphs [0116] – [0118])
- despreader (for example see figure 7, paragraphs [0116], [0123])
- frequency domain equalizer (for example see figures 7 and 9, paragraphs [0116], [0144])
- spreader (for example see Figures 1 and 5B, paragraph [0072])
- sequence extender (for example see Figures 1 and 5B, paragraph [0072])
- pulse shaper (for example see Figures 1 and 5B, paragraph [0072])

Furthermore, this citation discloses the methods as claimed in 27, 31, and 36 in the aforementioned citation. Therefore, the independent claims are not novel in light of this citation. It should also be noted that the feature of the despreader defining the symbol rate being less than the chip rate, is unavoidable with the existence of the sequence extension remover. Additionally, the feature of the ratio of the spread rate to the symbol rate is a known analysis of how much advantage is provided from the presence of the sequence extension remover, and thus the amount of efficiency that results.

Therefore the subject matter of these claims is not new and does not meet the requirements of Article 33(2) PCT with regard to novelty.

(See Supplemental Sheet)

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International Application No.

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

Inventive Step (IS) Claims 1 – 54

Claims 1, 27, 31, 36 as above.

Claims 2 – 26, 28 – 30, 32 – 35, 37 – 54 lack inventive step when citations 2 – 5 are combined with Citation 1. Furthermore, when citations 2 – 5 are combined with common general knowledge claims 2 – 26, 28 – 30, 32 – 35, 37 – 54 also lack inventive step since claims 2 – 7, 12, 17 – 26, 29, 30, 32 – 34, 37, 38, 41, 42, 52 relate to parameters or structures that are merely matters of design choice when the general technical knowledge about the state of the art is used and claims 8 – 11, 13 – 16, 28, 35, 39, 40, 43 – 51 relate only to feature that are typical in devices of this type. Therefore, claims 2 – 26, 28 – 30, 32 – 35, 37 – 54 do not meet the criteria set out in PCT Article 33(3).

**Box No. VIII**    **Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 27 and 31 lack descriptive support because they do not define the removal of a predetermined number of chips from at least one predetermined position and therefore reducing the symbol rate of the received signal, in order to increase the efficiency by reducing the workload and power consumption of the transceiver system, is clearly defined on page 3 line 28 – page 4 line 2, page 4 lines 11 – 13 and 20 – 23, page 5 lines 1 – 15, and page 7 lines 17 – 19 and this feature is considered to affect the working of the invention.